Table 1. Arthropod, helminth, and protozoan parasites of five white-tailed deer (Odocoileus virginianus) collected from Hillside National Wildlife Refuge, Holmes County, Mississippi, on July 23, 1991.

Animal Number	1	2	3	4	5
Age (years)	5	4	2	2	1
Sex	F	F	F	F	M
Weight (pounds)	130	140	113	125	100
Physical Condition	Good	Good	Fair	Fair	Fair
Kidney Fat Index	16.0	30.1	17.5	22.6	19.1
Packed Cell Volume	46	33	36	NA	39

ARTHROPODS

Animal Number	1	2	3	4	5
Lice	Light	Light	-	-	Light
Louse Flies	-	-	-	-	-
Ticks	-	-	-	-	-
Chiggers	Light	Light	Light	Moder	Light
Ear Mites	-	-	-	-	-
Nasal Bots	-	-	-	-	-

Location in Host	HELMINTHS	Number of Parasites Per Deer 1	2	3	4	5	Range	Prevalence	Average
Brain									
Circulatory									
Lungs	Dictyocaulus viviparus	8	8	23	7	42	7-42	100%	17.6
	Protostrongylid larvae	-	-	+	+	+	-	60%	-
Thoracic Cavity	Setaria yehi	-	-	-	-	1	0-1	20%	0.2
Abdominal Cavity									
Liver									
Esophagus									
Rumen									
Abomasum	Mazamastrongylus odocoilei	64	-	-	-	-	0-64	20%	12.8
APC = (1,848)	Mazamastrongylus pursglovei	1,283	1,060	1,470	2,558	1,375	1,060-2,558	100%	1,549.2
	Ostertagia mossi	193	-	-	122	162	0-193	60%	95.4
	Ostertagia dikmansi	-	-	210	-	-	0-210	20%	42.0
	Trichostrongylus askivali	-	-	420	-	323	0-420	40%	148.6
	PROTOZOANS								
Blood	Trypanosoma cervi	-	-	+	-	+	-	40%	-
	Theileria cervi	+	-	-	-	+	-	40%	-

INTERPRETIVE COMMENTS: Large lungworms (Dictyocaulus viviparus) present in low to moderate numbers in all deer including two deer with sufficient numbers of parasites to be of concern. Large lungworms and protostrongylid larvae, probably from muscleworms (P. andersoni), associated with mild to extensive lung damage (peribronchitis, bronchitis, pleuritis, pneumonia) in three animals, including one animal (No. 5) with significant pulmonary damage. Abomasal parasites (Mazamastrongylus odocoilei, M. pursglovei, Ostertagia dikmansi, O. mossi, and Trichostrongylus askivali) at a moderately high level (APC = 1,848) indicating a good probability that the herd exceeds or is near the upper limit of nutritional carrying capacity. Abdominal worms (Setaria yehi) present but not considered pathogenic at the low level encountered. Blood protozoans (Trypanosoma cervi and/or Theileria cervi) present in three deer with the latter considered a stressor only in malnourished, heavily parasitized hosts. Arthropod parasites at levels less than commonly found on white-tailed deer in the southeastern United States. Insect-induced lesions (dermatitis) were evident in one deer. Nonspecific lesions (peritonitis and lymphadenitis) often associated with parasitism were noted in two animals.

Physical condition ratings, kidney fat indices, body weights, and hematologic values not remarkable. Serologic tests for antibodies to selected infectious diseases disclosed suspicious reactions to epizootic hemorrhagic disease and bluetongue viruses in two deer. Both of these viruses can cause hemorrhagic disease which is the most significant infectious disease of white-tailed deer. The remaining serologic tests were uniformly negative suggesting minimal activity by these etiologic agents.

An overview is as follows: 1) based on APC data the herd may exceed the nutritional carrying capacity; 2) the levels of important pathogenic parasites (primarily large lungworms) were at levels considered sufficient to warrant concern for herd health; 3) lung damage due to lungworm infections was detected indicating potential for more severe lungworm pneumonia problems; 4) there has been activity by the hemorrhagic disease viruses which are the most important infectious disease agents of deer; and 5) the overall health status of the population is such that deterioration in herd health can be expected to occur if current herd density continues or increases. Based on these findings, density of this herd should be controlled to help alleviate the density dependent disease factors (primarily lungworm problems).

Table 2. Results of serologic tests for selected diseases in five white-tailed deer from Hillside National Wildlife Refuge, Holmes County, Mississippi, on July 23, 1991.

Disease	Deer Number 1	2	3	4	5
Leptospirosis					
(serotype pomona)	Neg	Neg	Neg	Neg	Neg
(serotype hardjo)	Neg	Neg	Neg	Neg	Neg
(serotype grippotyphosa)	Neg	Neg	Neg	Neg	Neg
(serotype icterohemorrhagiae)	Neg	Neg	Neg	Neg	Neg
(serotype canicola)	Neg	Neg	Neg	Neg	Neg
(serotype bratislava)	Neg	Neg	Neg	Neg	Neg
Brucellosis	Neg	Neg	Neg	Neg	Neg
Anaplasmosis	Neg	Neg	Neg	Neg	Neg
Infectious bovine rhinotracheitis (IBR)	Neg	Neg	Neg	Neg	Neg
Bovine virus diarrhea (BVD)	Neg	Neg	Neg	Neg	Neg
Parainfluenza$_3$ (PI_3)	Neg	Neg	Neg	Neg	Neg
Epizootic hemorrhagic disease (EHD)	Neg	Sus	Sus	Neg	Neg
Bluetongue (BT)	Neg	Sus	Sus	Neg	Neg
Vesicular stomatitis virus (VSV-NJ)	Neg	Neg	Neg	Neg	Neg
Vesicular stomatitis virus (VSV-Ind)	Neg	Neg	Neg	Neg	Neg

Table 3. Lesions and pathologic conditions in five white-tailed deer collected from Hillside National Wildlife Refuge, Holmes County, Mississippi, on July 23, 1991.

Lesion/Condition	Deer Number 1	2	3	4	5
Peribronchitis/bronchitis	-	-	1	1	2
Pleuritis	-	-	1	1	2
Pneumonitis	-	-	1	-	2
Bronchopneumonia	-	-	-	-	2
Fibrinous peritonitis	-	-	-	-	2
Lymphadenitis	-	1	-	-	1
Insect-bite dermatitis	-	-	-	1	-

*Key: - = lesion or condition not present; 1 = minor tissue damage or mild pathologic change; 2 = moderate tissue damage or moderate pathologic change; 3 = extensive tissue damage or marked pathologic change.